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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SENF, BEHROOZ M

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/752,261

**Applicant(s)**

LIENHART, RAINER

**Examiner**

Behrooz Senfi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 5,7-10 and 14-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-4,6,11-13 and 26-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments (filed, 11/25/2005, page 7, last paragraph) with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.
2. Applicant's arguments filed (filed, 11/25/2005, page 8) with respect to 35 U. S. C. 103 rejections have been fully considered but they are not persuasive.

Response to remarks with respect to 35 U. S. C. 103 rejection;

Applicant asserts (page 8, lines 10 – 13) that, Wilcox and Szeliski fails to teach or reasonably suggest “detecting transition points in the first and second shot, based on the training points, automatically determining a duration of a transition sequence based on probability distribution.”

Examiner respectfully disagrees: Wilcox '542 teaches, detecting transition points in the first and second shots (i.e. fig. 7, shows detection of transition, abstract, lines 1 – 2, col. 1, lines 15 – 18 and lines 48 – 49 and col. 2, lines 5 – 6 and 45 – 49 col. 3, lines 28 – 30, where detects transition between shots) and based on the transition points (i.e. which is provided to the system/processor by training the model structure, col. 10, lines, 23 – 32), automatically determining a duration of a transition sequence based on probability distribution (i.e. fig. 7,  $t_1 - t_2$ ,  $t_2 - t_3$ ,  $t_3 - t_4$  and etc., which are the duration of a transition, beginning and ending of a transition, col. 4, lines 32 – 36, and col. col. 2, lines 44 – 46 and col. 10, lines 52 - 60) wherein after providing the information, the system automatically process the video. In view of the above claims 11 – 13 and 26 –

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31 are still rejected for the same reason as stated in the previous Office Action (dated 8/24/2005). The grounds are being restated.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 – 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szeliski et al (US 6,600,491) in view of Bozdagi et al (US 6,493,042).

Regarding claim 1, Szeliski '491 teaches, processing video comprising: acquiring a video stream (i.e. fig. 1, video camera 192, col. 9, lines 7 - 8) and dividing the video stream into a plurality of sub-sections (i.e. col. 9, lines 8 – 9, sampling video images, and col. 23, lines 25 – 35) and determining a probability of whether one or more synthesized transition effects are present at one of the plurality of sub-sections of the video stream (i.e. fig. 2, synthesizer 202, and col. 4, lines 60 – 67) and wherein the one or more transition effects are of a specific number and a specific type (i.e. col. 4, lines 57 – col. 5, lines 2, wherein potential acceptable transition is the type of transition to ensure a smooth appearance) and embedding the probability into the sub-section of the video stream (i.e. fig. 2, rendering module 208, wherein selected frame associated with a particular transition are manipulate/synthesize to generate a new sequence of frames).

Szeliski patent is silent in regards to explicitly point out, detecting transition points in the video stream, automatically generating segment annotations in the video stream at the detected transition points, as newly added to the claim.

However such features are well known and used in the prior art of the record, as evidenced by Bozdagi '042 (fig. 25, abstract, col. 1, lines 55 – col. 2, lines 26).

Taking the combined teaching of Szeliski and Bozdagi as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to modify Szeliski's system and process of generating video animation, by detecting transition points/boundaries (like; dissolves, wipes, fade and cuts) which is used for automatic annotation of digital video sequence, as taught by Bozdagi '042 (col. 1, lines 45 – 67).

Regarding claim 2, combination of Szeliski and Bozdagi teaches, wherein, probability is performed by a classifier (i.e. col. 3, lines 50 – 57 of Szeliski).

Regarding claim 3, combination of Szeliski and Bozdagi teaches, classifier is provided a fixed sized portion of the sub-section (i.e. fig. 4, col. 9, lines 19 – 23 of Szeliski).

Regarding claim 4, it is noted that Szeliski patent is silent in regards to, outputting a location of the one or more transition effects and duration of the one or more transition effects in the video.

However such features are well known and used in the prior art of the record, as evidenced by Bozdagi '042 (col. 5, 19 – 25 and 40 - 55).

Taking the combined teaching of Szeliski and Bozdagi as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to realize

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that, detecting gradual changes is implemented with knowing the characteristics of the gradual changes, which includes, location and duration of the transition effects, as taught by Bozdagi.

Regarding claim 6, combination of Szeliski and Bozdagi teaches, transition effects comprises one or more of; a dissolve, a fade, a wipe, a iris, a funnel, a mosaic (col. 22, lines 7 – 10 of Szeliski, where teaches fade-in and fade-out, and also col. 1, lines, 55 – 58 of Bozdagi).

5. Claims 11 – 13 and 26 – 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilcox et al (US 6,072,542) in view of Szeliski '491.

Regarding claim 11, Wilcox '542 teaches, processing video comprising: acquiring a first shot and a second shot from a plurality of video streams (i.e. col. 3, lines 25 – 45, where teaches transition states between shots), and detecting transition points in the first and second shots (i.e. fig. 7, shows detection of transition, abstract, lines 1 –2, col. 1, lines 15 – 18 and lines 48 – 49 and col. 2, lines 5 – 6 and 45 – 49 col. 3, lines 28 – 30, where detects transition between shots) and based on the transition points (i.e. which is provided to the system/processor by training the model structure, col. 10, lines, 23 – 32), automatically determining a duration of a transition sequence based on probability distribution (i.e. fig. 7,  $t_1 - t_2$ ,  $t_2 - t_3$ ,  $t_3 - t_4$  and etc., which are the duration of a transition, beginning and ending of a transition, col. 4, lines 32 – 36, and col. col. 2, lines 44 – 46 and col. 10, lines 52 - 60) wherein after providing the information, the system automatically process the video, determining duration of a transition sequence is necessitated by the process (i.e. duration of best transition sequence), furthermore, the

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transition sequence including a specified number and specified type (i.e. figs. 6 – 7, where detect the different type of transition effect, and col. 10, lines 52 – 60, specified number of frames, also col. 10, lines 57 - 59, brightness values also consider as specified type) and generating the transition sequence of the duration, the transition sequence having the one or more transition effects (i.e. figs. 6 - 7, col. 4, lines 44 – 52), and generating a video sequence comprising the transition sequence from the first shot to the second shot for the determined duration, wherein the transition sequence is inserted into the video sequence (col. 5, lines 25 – 29, cols. 7 – 8, lines 55 – 20, encoded onto the frames is the same as inserting), and training a classifier to detect a transition effect within the generated video sequence (i.e. col. 4, lines 37 – 52, col. 7 – 8, lines 55 – 15). It is unclear that the transition sequence as taught by Wilcox is synthesized. There is indication (i.e. col. 4, lines 54 – 56 of Wilcox) of operator defines the transitions between states. However, synthesizing the new generated video sequence using identified transitions is well known and used in the prior art of the record as evidenced by Szeliski '491 (i.e. fig. 2, 202) wherein teaches selecting the frame associated with a particular transition and manipulate/synthesize those frames to generate a new sequence of frames. Therefore, taking the combined teaching of Wilcox '542 and Szeliski '491 as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to modify the training classifier with a synthesizer as taught by Szeliski '491 to place the new video sequence in a synthesized order with respect to frames associated with these transitions.

Regarding claim 26, the limitations claimed are computer program and software for executing the method step of claim 11. Since, The disclosure of Wilcox and Szeliski is computer implemented, program and/or software instruction to carry on the process would have been necessitated by the process. Therefore, the ground for rejecting claim 11 also applies here.

Regarding claims 12 – 13 and 29, combination of Wilcox '542 and Szeliski '491 teaches, probability distribution represents a fixed duration, in claim 12 (i.e. fig. 7, T2 – T3 of Wilcox) and the transition sequence comprises one or more of: a dissolve, a fade, a wipe, a iris, a funnel, a mosaic, in claims 13 and 29 (i.e. fig. 2 of Wilcox).

Regarding claims 27 - 28, combination of Wilcox '542 and Szeliski '491 teaches, one or more transition effects include a portion of the first shot and a portion of the second shot, claim 27 (i.e. col. 3, lines 25 – 45 of Wilcox) and first shot before the transition effects and the second shot after transition effects, in claim 28, reads in the fact that, Wilcox teaches "segment including shots and shot includes multiple frames as discussed in the above" therefore the presence of a transition would be between two frames, in which one would be before the transition and the other one would be after the transition.

Regarding claims 30 - 31, the limitations claimed have been analyzed and rejected with respect to claim 11 above.

6. Claims 32 - 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szeliski et al (US 6,600,491) in view of Bozdagi et al (US 6,493,042) further in view of Wilcox et al (US 6,072,542).



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Regarding claim 32, the limitations claimed are a system corresponding to the method of detecting transitions in a video stream of claim 1, which have been analyzed and rejected with respect to claim 1 above.

As for the additional limitation, transition synthesizer module, please see (fig. 2, synthesizer 202, col. 12, lines 26 – 31 of Szeliski).

Furthermore, as for the limitation, a classifier module, the classifier module to be trained to identify the transition effect based on the video sequence.

It is noted that, Bozdagi patent (col. 5, lines 20 – 24) teaches extracting and classifying intervals of gradual transition to detect changes/transition, but is silent in regards to training the classifier module.

However, such features are well known and used in the prior art of the record as evidenced by Wilcox (col. 4, lines 37 – 52, and col. 5, lines 20 – 45).

Taking the combined teaching of Szeliski, Bozdagi and Wilcox as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to implement such teachings in an effort to precisely detect the changes/transition effect in a video stream.

Regarding claims 33 – 34, combination of Szeliski, Bozdagi and Wilcox teaches, transition synthesizer module generate the video sequence using random video shots from plurality of video stream, in claim 33 (i.e. fig. 1, 192 and fig. 2, synthesizer module 202 of Szeliski) and transition effect is associated with the duration based on the probability distribution, in claim 34 (i.e. fig. 7 of Wilcox).

Regarding claim 35, combination of Szeliski, Bozdagi and Wilcox teaches, classifier module comprises re-scaling a time series of frame-based feature (i.e. cols. 12 – 13, lines 52 – 55, analyzer “200” and synthesizer “202” of Szeliski).

### **Contact**

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(571) 272-7339**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mehrdad Dastouri** can be reached on **(571) 272-7418**.

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**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**Or faxed to:**

**(571) 273-8300**

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, Va. 22314.

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(571) 272-6000**.

B. M. S. 

2/10/2006

**MEHRDAD DASTOURI**  
**SUPERVISORY PATENT EXAMINER**

*TC 2600*

*Mehrdad Dastouri*